

REMARKS

Upon entry of the amendments, claims 1-37 are pending in the application. Claims 1-21 have been withdrawn from consideration and claims 22-36 have been rejected. Claim 30 contains allowable subject matter and has been amended to be in independent form based upon original claim 27. Claim 37 has been added to the application. The requisite claim fee is being forwarded with this response.

Applicants provide the following comments to the Office Action of December 12, 2003.

Drawings

The drawings were found to be objectionable because the brush cover mechanism was not shown. Applicants have amended Figures 9 and 11 to depict the brush cover cleaning mechanisms 105a and 105b. This feature is set forth in original claim 30 and page 48, lines 20-25 of the application.

Claim Rejections – 35 U.S.C. § 112

Claims 22-26 and 30 are rejected as indefinite because of antecedent basis issues in claims 22 and 30. The claims have been amended to recite “an arranging section of said cup”, “an arranging section of said arm driving mechanism”, and “a waiting time” where applicable. Applicants request that this rejection be withdrawn.

Claim Rejections – 35 U.S.C. § 102

The Office Action sets forth the following anticipation rejections:

- 1) claims 34 and 36 are rejected based upon Ohtani (US 6,151,744), which was filed April 14, 1997 and issued November 28, 2000; and
- 2) claims 31-33 are rejected as anticipated by Nishimura (US 6,286,525), which was filed May 1, 1998 and issued September 11, 2001.

Applicants have carefully considered these rejections and respectfully request that they be withdrawn.

Regarding the first rejection, independent claim 34 has been amended to set forth clearly that a plurality of brush holding arms are independently moved in the same direction, and that at least one of these brush holding arms is capable of outrunning the other brush holding arms in the scanning direction.

In contrast to the claimed invention, Ohanti discloses cleaning brushes 20 and 120 that rotate around rotary axes 40a and 140a, respectively, which are positioned outside the cup 10, as shown in FIG. 13. Hence, Applicants believe that Ohanti fails to disclose “a plurality of arm driving mechanisms for driving independently said plural brush holding arms in a same direction”.

Applicants also do not believe that the cited patent discloses “wherein at least one of said plural brush holding arms is capable of outrunning the other brush holding arms in the scanning direction”. In Ohanti, the operation pattern of each brush is controlled so as to prevent a plurality of brushes from being present together simultaneously in the center of the substrate (i.e., so as to prevent a plurality of brushes from interfering each other), as shown in Fig. 14. In other words, Applicants believe that this patent fails to disclose or even remotely suggest the construction or control that permits one of the plural brushes to outrun the other.

Due to the foregoing, Applicants submit that independent claim 34 and the resulting dependent claims are not anticipated or obvious in view of Ohanti.

Regarding the second rejection, Applicants submit that Nishimura fails to disclose the following features of independent claim 31:

“wherein the process liquid is spurted from said first process liquid spurting nozzle to substantially the center of the substrate held by said spin chuck, and the process liquid is spurted from said second process liquid spurting nozzle to a position outside the center of the substrate held by said spin chuck and is apart from a movement path of the brush.”

Applicants believe that Nishimura discloses a structure where the brush and the two cleaning nozzles are held by a single supporting arm so as to be moved together. Reference is made to Fig. 12. Applicants further believe that the structure of Nishimura results in the cleaning liquid being spurted from the two cleaning nozzles to the movement path of the brush.

Therefore, Applicants respectfully assert that independent claim 31 and the resulting dependent claims are not anticipated or obvious in view of Nishimura.

Claim Rejections – 35 U.S.C. § 103

The Office Action sets forth the following obviousness rejections:

- 1) claims 22-29 are rejected based upon Nakashima (US 6,115,867); and
- 2) claim 35 is rejected based upon Ohtani and Sugimoto (US 5,647,083).

Applicants have carefully considered these rejections and request that they be withdrawn.

Regarding the first rejection, the Office Action acknowledges that Nakashima fails to teach the partition wall between the driving mechanism for the holder arm and cup. Further,

Nakashima fails to teach a brush cover on the holding arm between the driving mechanism and brush. The Office Action sets forth that adding shielding or guards would be an obvious modification based upon routine experimentation by one skilled in the art.

Claim 22 has been amended to recite that the cleaning processing apparatus comprises a spin chuck, a cup arranged to surround the spin chuck for applying a cleaning processing to the substrate, a plurality of cleaning brushes, a plurality of brush holding arms, a plurality of arm driving mechanisms for independently driving the plural brush holding arms in the same direction, and a partition wall for separating the arranging section of the cup from the arranging section of the arm driving mechanisms.

Applicants note that Nakashima teaches a cleaning apparatus comprising a scrub cleaning device and a processing nozzle, which are both moveable. However, Nakashima fails to teach “a plurality of arm driving mechanisms for driving respectively said brush holding arms in the same direction”.

Further, Applicants note that there is insufficient basis in the cited prior art for the assumption that one skilled in the art would modify Nakashima to have covers, walls, or shields. A proper *prima facie* case of obviousness is not based on an “obvious to try” standard. A proper rejection requires that both the claimed features and motivation for the proposed combination be found in the prior art rather than based on hindsight obtained through reviewing a patent application.

Therefore, Applicants respectfully assert that independent claim 22 and the resulting dependent claims are not obvious in view of Nakashima.

Applicants also urge the Examiner to withdraw the rejection in regards of independent claim 27. This claim has been amended to recite:

“a brush cover arranged on the holding arm for suppressing the scattering of a cleaning liquid toward said arm driving mechanism during the cleaning processing,

wherein said brush cover is arranged such that the lower end of said brush cover is positioned below a line joining the center of the substrate held by said spin chuck and the upper end of said cup, and

wherein said brush cover is arranged to cover partly the outer circumferential surface of said brush in a position where the cleaning liquid spurted from said cleaning liquid supply mechanism is not brought into direct contact with said brush cover”.

Applicants believe that the aforementioned structure would not be obvious by merely introducing the idea of mounting a brush cover for preventing the scattering of the cleaning liquid into the apparatus of Nakashima, which merely comprises a movable scrub cleaning device. The cited prior art lacks sufficient teachings to disclose the claimed structure. Accordingly, Applicants believe that the apparatus recited in amended claim 27 is not obvious in view of Nakashima.

Regarding the second rejection, Applicants believe that claim 35 is not anticipated or obvious in view of the cited prior art because it depends upon the subject matter set forth in independent claim 34.

New Claim

New claim 37 is similar to claim 22, except it does not recite the term plurality in regards of the cleaning brush and sets forth a cleaning liquid spurting nozzle. This claim is supported by

Figs. 9 and 13 of the present application. Applicants believe that this claim is allowable in view of the cited prior art.


CONCLUSION

Applicants respectfully request allowance of the application. If any additional fees are due in connection with the filing of this response, such as fees under 37 C.F.R. §§ 1.16 or 1.17, please charge the fees to Deposit Account No. 02-4300. Any overpayment can be credited to Deposit Account No. 02-4300.

Respectfully submitted,

Date: March 12, 2004

Signature:



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SGRDC/212235.1